Biochemical processes lab report

The Laboratory Report1,2 Authors: M.C Nagan and J.M. McCormick Introduction The research paper is the primary means of communication in science. The research paper presents test results and data interpretation, describes the logic and design of the experiment, provides a conditions for the results in terms of previous findings and evaluates the overall success of the experiment(s). Scientists working in industrial laboratories don't write as many journal articles as their colleagues at the Academy, but typically write progress reports that take the same form as a journal paper. So no matter what your career goals are, it's important that you get to know this writing style. There are rules set for preparing a journal article (or a laboratory report). Style requirements vary only slightly from journal to journal, but there are far more similarities than differences in scientific writing style. If you are writing an article for publication in a particular journal (or preparing a laboratory report in the style of a particular journal), you should consult the guidelines section of the journal's website authors (this information is also included in the first issue of each journal each year). There are several 3,4 style guides and articles 5 to help scientists and students prepare their manuscripts. The most useful of these for chemists is the ACS Style Guide of the American Chemical Society (ACS), which may be found in the Truman Library or may be purchased from the ACS website. Because of the variety in journal styles, and the requirements of a particular course, your coach will inform you of the specific style requirements for your class. This guide is based on the American Chemical Society style magazine, 6, and is meant to provide a good starting point for writing a laboratory report. This is not meant to guide the definitive style; You should adjust your style with your audience and the magazine where your results will be published. Public editorial issues although we shouldn't, we all rock with the first impressions. How your article appears to the editor of the magazine or reviewers is your first impression of your science, and it paints your impressions of your results, if you let it go. Nothing is worse than a steep prepared paper without a page number, a font that cannot be read or full of grammatical errors. Remember, everyone assumes that if you didn't take the time to write your paper carefully, you didn't have time to do your science carefully. Below are some public editorial guidelines that will follow that will leave a good first impression with your readers. 1) Make your two paper spaces across (including shape descriptions and tables, too). 2) Use a logical font like 12 Times dots. 3) For figures, you may choose to use a sans-serif font for better graphics quality such as Arial or Helvetica. 4) Use at least 1 margin on each side. 5) Issue Pages. Focus page numbers in the top right corner, right hand, or at the bottom of the screen. Both styles are acceptable and whichever one you choose remains consistent in your numbering layout throughout the article. 6) Do not start sentences with symbols or numbers; For example, write alpha-lactalbumin when starting a sentence instead of α-lactalbumin. Also spell symbols or numbers in a title, except when part of a chemical name (such as 2-hexanol). 7) Spell check document thoroughly. Have someone who will give you an honest and complete critique of your paper, read the paper. Reconsider, revise, appeal! General styl style issues are the key to scientific communication. The editors of the magazine, the reviewers who review a manuscript, and the readers of the magazine who are interested in the results presented in an article, all expect certain things to be present in a manuscript and are in a certain order. Just like the sloppy-looking article, an article that does not adhere to the expected style, no matter how good the science is, reflects poorly on the author. 1) The article must be written passively in the third person's voice. Sometimes, but rarely, it is appropriate to use us when describing the intentions of writers. In general, it depends on the subject of the sentence. Consider the following two sentences: a) solid calcium (5 g) was poured into a beak. B) Poured calcium solid (5 g) into a beak. In the first sentence (a) which is passive, the solid matter is calcium. In the second sentence, the subject is the testers. In scientific papers, the subject is often science and not experimenters. 2) Use the past time in general (as such, what has been or has been done). However, when describing the properties of molecules or organisms use the current stress because they still have these properties. 3) Unless otherwise directed, suppose your laboratory report reader is your counterpart, a moderate chemistry student, not a chemistry professor. So everything has to be explained as if the reader knows some chemistry, but he is not an expert in the subject of the article. In no way does the reader know what you're doing, or why you're doing your test. Think about what you want to know about the subject if you were a singer. 4) Avoid repetition in the language. Try not to start each sentence with the same construction and words. 5) Do not use quotes. Unlike humanities or literature articles, quotes are rarely found in scientific papers. However, it is appropriate to parading other writers. 6) Explain the technical conditions. The example of hemoglobin has a Hill constant, the amount that describes the degree of connection of the cooperative symbian, 2.8. 7) Define abbreviations. The official colors example of Truman State University (TSU) are purple and white. 8) Places a space between a number and a unit. Sephadex (10 g) was combined with H2O dionized (100 mL) at 25°C. 9) Do not start a sentence with a number or Figure 1 or Table 1, etc. Correct: Milk samples (50 µl) were analyzed using high performance liquid chromatography under three different buffer conditions (Fig. 1). Incorrect: Figure 1 shows high performance liquid chromatography for samples run under three different buffer conditions. Incorrect: 50 microl valves were analyzed using high performance liquid chromatography using three different buffering conditions. 10) There are three ways to refer to an article in the text. For example, cite the work written by Jackson, A. K. Wilson, R. S.; Houk, K. L.* , could appear in the text in any of the following ways. (Note that et alia stands for et and it's not because of English.7) a) Jackson et al.b) Jackson et c) Hook et al. In the last example we assumed that the writer whose name starred is the principal investigator in the project, and gave them more credit for the work. Note that this is an American convention for the list of original researchers of the latest, while many European and Japanese journals put them first. There are often two original detectives, and in this case both should be mentioned. For example, the work of Jackson, A. K. Wilson, R. S.*; Houk, K. L.* should be noted in the given format for example (c) above, as Wilson, Hook and Fellow. If there are more than two original researchers, it is best to use any of the given formats for example (a) or (b), or to use some other wording to prevent this construction entirely. Sections of the organization/components sections should appear in your article as described below. All sections but section title are explicitly labeled, usually with bold letters making it different from the rest of the text, and aligned on the page. An empty line must appear after the last word section to separate the different sections, but a line should not be placed after the section title. 1) Title/Title Page 2) Abstract 3) Introduction 4) Experimental (Materials and Methods in Some Journals) 5) Results 6) Discussion 7) Conclusion 8) Certificates 9) References 10) Tables 11) Designs 12) Legends Form 13) Figures 14) Supporting Information Please note that you should not physically assemble your article in this way. Instead, it is suggested that you compose: a) materials and methods, b) figures, legends and shaped tables, c) results, d) discussion, c) conclusions, and) introductions and designs, g) abstracts, and h) title. Then put all sections together in the final article in the specified order above. A template is available to help you organize your report. Click here to learn more about it. Sub-sections may be useful for organizing most sections into sub-sections. These sub-sections should have their own titles that take a course verbally and followed. Article Description The title/title of page A of the title reflects the emphasis and contents of the article. It tells the reader the subject of the article and deceives the reader to continue reading more. Therefore, it is not uncommon to reveal the title of the results or the major conclusions of the experiment. Examples are provided below. The title must be bold in its own page (title page), left aligned at the top of the page. Note that in some journals the font size of the title is 2 points larger than the text (i.e. 14 points, if the rest of the article is in a standard 12-point font). However, this is not standard and you should check with your coach for which format he/she wants you to follow. The title must be concise (up to 2 lines) and grammatically correct. Under the title, write your professional name and address in italics (Department of Chemistry, Truman State University, 100 East Ordinary, Kirksville, MO 63501). For example, 1) Determination of dilated fluidity of water and benzene by viscosity measurements 2) α-lactalbumin treatment from cow's skim milk by acetyl chromatography of iucizable metal ion 3) synthesis and characterization of potassium tris() oxalato(ferrate(III) 4) Ionic Composition of Drinking Water influenced by Pipe Materials: An Atomic Absorption Spectroscopic Analysis Abstract The abstract the abstract is a one-paragraph summary of the paper that is written in the present tense. As the abstract is the only part of the article that has been inserted into the article database, it should be able to stand alone, apart from the article. First, one to three abstract sentences should briefly introduce the reader with the problem studied. Then, the scientific approach, major results and the primary importance of the findings should be presented. Abstracts are generally 150-200 words (less for shorter articles). This section is normally written after the body of the paper. Since the abstract is separate from the article, all acronyms must be written, or defined, and any reference is written in full. An example of how a reference might appear in an abstract has been shown smoke inhaled from permanent markers that cause brain damage (Johnson, permanent markers of A. J. and brain. Res. 2004, 18, 215–218). Note in some journals that the inclusion of the title is not required in a reference (vide infra). Introduction Introduction Should present the scientific problem in the hands of the reader. Explain to the reader why the experiment was done, how it was designed and perhaps if appropriate, what was found. The literature that is relevant should be incorporated and will help the reader understand the context of your study. A good rule of thumb is to start at the most general subject and gradually move towards the specific. Here's an outline for an introduction: I. The broad importance of the subject to the discipline of chemistry and society in general is second. Familiarity with the topic within III. Describes the specific problem of the fourth. Consider the general objectives and importance of the subject of experimentation or research in this section, including figures, designs and equations that complement the text. While this is similar to the information you had to write your notebook, the introduction of an article differs from the background you included for an experiment (or experiment) in your notebook. Remember that you are trying to reach a larger, more general audience with your article, and the introduction should be structured to draw readers in and help them focus on their important results. The experimental part of your article should have been a logical and coherent recount of the experiment(s). This section should be thorough enough for a trained scientist to take your report and repeat your experiment. The experimental section is described more in a laboratory report than the relevant section in the laboratory notebook. It should not be a step-by-step procedure of activities performed during the laboratory period. The first paragraph of the experimental section contains information about the key chemicals used in the procedure. When chemicals are used as downloads, there will usually be a statement for that effect and more details are usually not necessary. You list the name of the chemical supplier and the purity of the material will be listed in cases where the chemical is hard to find, it is of particular purity or if there is only one supplier. Don't list too many numbers. If a starting material was synthesized on the basis of a literature procedure, then it would be placed in the opening paragraph and the procedural reference. If purification or drying of compounds is required, it is also described here. The first paragraph will often list the tools used to specify newly synthesized materials as well. All tools and equipment must be specified including the tool model number and the manufacturer's name (serial number is not included). When a spectroscopy or physical method is the centerpiece of the report, it will be described in its subset. You don't have to write experimentally in this fashion. For common techniques, laboratory textbooks should be noted. However, if a procedure that had already been published was amended, then this would be stated and only the amendments made would be included. If the method is your own, then outline the procedure with the main points, including details that are vital to repeat the experiment. This may include the type and size of your HPLC column, buffer or concentration of chemicals. When material synthesis is reported, the synthetic procedure used to make each material is described in its separate clause. The paragraph begins with the name matter, or its acronym (if its acronym was defined earlier in paper), in bold form. If numbers are assigned to combinations, Also included (in Perrant). Often synthesis will be written, even when a literature procedural was followed. Crime returns and percentages must be reported. Some new composition features are included at the end of the paragraph describing its synthesis. These are: melting point range (and literature value, if known), elemental analysis (both calculated and found), selected peaks from the mass spectrum (with assignments), selected IR peaks (also with assignments), and each NMR peak with chemical shifts, multiplying and merging them (often you'll find the pairing observed quoted and assigning peaks). Below is an example of how to report the synthesis of a compound. Tris-(2-pyridylmethyl)Amin: To a solution that contains 10.11 g 2-pyridyl methyl chloride hydrochloride and 20.3 ml 2-pyridylmethyl amine in 20 ml H2 O was added to the kennedy, drop-wise manner (~1 drop every 25 seconds) solution containing 5.03 g NaOH in 12 mL H2O so that all solutions were added in about 1.5 h. After full NaOH was added, the reaction mixture was heated on the mant to 70°C for 20 min. Then the cooled reaction mixture was extracted four times with 50 mL CH2Cl2. The combined extracts were dried on Na2SO4 and CH2Cl2 was removed using a two-time evaporator. The resulting red oil after solid standing. Then the red solid was dissolved in the least hot hexan. The yellow solution was decanted from a red oil that was not dissolved and was filtered hot. After cooling the product is preyed on large needles, which were recovered by filtration and dry air. 2.08 g of the product (23% yield) was obtained from Hexan. product melting point 85°C, sharp (literature 87 - 89 °C).ref 1H NMR (CDCl3, ppm): 3.89 (s, 6 H, methylene), 7.14 (m, J = 1.3, 6.1 Hz, 3 H, pyridyl), 7.58 (d, J = 7.8 Hz, 3 H, Pyrdale), 7.63 (m, J = 1.8, 7.6 Hz, 3 H, Pirdale), 8.15 (m, J = 0.9, 4.9 Hz, 6 H, Pirdale). 13C NMR (CDCl3, ppm): 60.13 (methylene), 122.01, 122.97, 136.48, 149.06, 159.25 (Pyrdale). The experimental section has two quirky wrinkles on the general scientific style. These: 1) When, citing previously published procedures, the authors' names are generally not included, just the purification of the cow's brain isolate was carried out according to previously published procedures.ref incorrectly the procedure previously published by Jackson and his colleagues was followed by the amendments specified below. 2) When citing the use of kits, pre-packaged or other commercial equipment with directions, including only the company name in Prants; For example, Bradford (Sigma) paper was conducted to determine the total protein concentration of five protein isolates. The results are presented and summarized in the results section as reader-friendly. Raw data is not provided here. For example, it is appropriate to include the calculated average of a solution but not the original absorption value that was collected from the spectrometer; That information best remains in your lab notebook. Graphs and tables often make data interpretation easier and more understandable (click here to check the graph preparation). A graph is presented in the paper in shape. In general, a graph or table is a suitable representation of data when more than 2 or 3 numbers are provided. Data presented as graphs or tables should be referred to, but should not be repeated verbatim in text, as this will defeat the purpose of a graph. More information about the figures and tables will be provided later. The results section also reports comparable literature values for the properties obtained and/or calculated in the paper. Viewing trends in numeric data is acceptable. However, the interpretation of the process should be saved for the discussion section. Remember, simply don't report your numerical results. The results section should have a narrative describing your results. This narrative can include describing data (such as spectra or data in graphs), what problems during data acquisition (and how they are resolved, or not) and a general description of how raw data is processed to give final results (not a step-by-step description of everything you've done). The reader wants to know what you've done, how you did it, what problems you've faced, and what your results have been. Each of these topics must be addressed in the results section in a manner that is clear, yet concise. The discussion is this section where the results are interpreted. This part of the article is similar to a debate. You need to provide your data, convince the reader of the reliability

of your data and provide evidence for your convictions. Evaluate your data first. Do you have good, average, terrible, or uninterpretable data? Evaluate your results by comparing to the values of literature or other backgrounds. Explain what results should be achieved and whether you have achieved these expected values or not. Note that even if the expected results are not achieved, you are not defeated. Unexpected results are often the most interesting. maybe your hypothesis was not correct . Why is it? What new hypothesis do your data propose? If you feel your results can't be trusted, you need to explain why. Use statistical analysis or chemical principles to support your claims. Was there a systematic error? Is the error due to the limitations of your device? Does your data look the same within a standard deviation? Assess the statistical significance of your data (click here to examine the statistical treatment of the data). After validate your data, you need to interpret your results; state what you believe your results mean. How do your results help us understand the scientific problem? What do your results mean in the larger picture of chemistry, or science? How do I Results related to the concepts specified in the introduction? Don't assume that your test has failed or been successful. You have to prove to the reader, with logical arguments and supporting evidence, the value of your study. The conclusions you wrote in your lab notebook are a good starting point from which to organize your thoughts. The discussion section of your article is very similar to the conclusion section structured in your notebook, and it may be a good idea to check that now (click here to check the conclusion structure in the lab notebook). Concluding the conclusion section is typically a one-paragraph summary of your laboratory report. Here you summarize the goal(s) of your experiment, state whether you have reached that goal, and briefly describe the implications of your study. Note that in some sub-disciplines of chemistry, the composition of discussion and conclusion sections is acceptable. Consult your course headings or check with your coach in a specific format used in your class. Acknowledging the acknowledgments section is where you thank anyone who has significantly helped you with the project or manuscript. For example, you would thank your laboratory partners if they are not authors on paper, anyone who helped with testing design or paper preparation. You may also include funding sources such as the Truman State University summer scholarship or the National Institutes of Health allowance. The sources of many ideas presented in your article are probably not exclusively yours. So you should cite other people's work wherever appropriate. However, you don't have to cite information that knowledge is common or exclusively your idea. The resources section is a compilation of all citations made within the article. It is not bingeology and therefore should not list sources that are not directly referred to in the text. Source format format resources vary among magazines. To report your chemistry lab, you need to follow the ACS guidelines by default, as in the ACS Style Guide and the Journal of the American Chemical Society, JACS (all samples given in this guide in accordance with the JACS format). If your professor requires you to match the format of a particular journal, look at the articles in that journal or refer to the journal's Authors' Directive. The specifications of most ACS journals are: 1) Resources should be compiled at the end of the article in references section. 2) References must be numbered in the order they appear in the article. To cite in the narrative, numbers must be superwritten and appear after pudding. y lines must be inserted between reference entries. 4) This part should double the distance just like the rest of your paper. 5) A reference is mentioned only once in the referrals section. If multiple reference citations are made in the text, then the number To that reference is placed in the text each time. Common abbreviations used in footnotes and references (e.k., op. cit., ibid.) are generally not used in scientific writing. Types of resource articles. Journal articles are the primary source found in laboratory reports. An example is given below. Note that the initials of the authors are given instead of the first and middle names. There is also no and before the last author's name. Some journals require that the title of the article be included in the reference (check with your instructor to see if he wants to use this style). When included, the title of the article should start with a large letter but other words in the title, unless they have the proper noun, should not be invested (see below). The magazine's title stands (click here for a list of acs acronyms for common journals). It's also a bold year and comma after year. Finally, the reference has an inclusive pydling (the first and last pages are given) the following are examples of the same journal article with the first given in style in which the title of the article is included in the reference, while the second is in the style in which the title of the article is removed. (1) Bergmann, U.; Glatzel, P.; deGroot, F.; Cramer, S. P. High resolution K capture X-Ray fluorescence spectroscopy: a new tool for chemical characterization. J. Am. Chem. Soc. 1999, 121, 4926-4927. (1) Bergmann, U.; Glatzel, P.; deGroot, F.; Cramer, S. P. J. Am. Chem. Soc. 1999, 121, 4926-4927. Book. Books should be cited in the following manner: (2) Brünger, A. T. X-PLOR Manual, Version 3.1: A System for X-Ray Crystallography and NMR; Yale University: New Haven, CT, 1990; pp 187-206. (3) Cheatham, T. E., III; Kollman, P. A. In structure, motion, interaction, and expression of biomass macromolecules; p. 99. Computer programs. Citations for computer programs vary. If someone at the Academy wrote the program, there is often a journal-article source. In other cases, the program is simply distributed by a company. Journal Article (4) Humphrey, W.; Dalke, A.; Schulten, K. VMD: Visual Molecular Dynamics. J. Mol. Graph. 1996, 14, 33-38. Distribution Company (5) Item, D. A.; Pearlman, D. A.; Cladwell, J. W.; Cheatham, T. E.; Ross, W. S.; Simmerling, C. L.; Darden, T. A.; Merz, K.M.; Stanton, R. V.; Cheng, A. L.; Vincent, J. J.; Crowley, M.; Ferguson, D.M.; Radmer, R. J.; Seibel, G. L.; Singh, U.C.; Weiner, P. K.; Kollman, P. A. AMBER version 5.0; University of California: San Francisco, 1997. (6) Second insight. San Diego, CA: Molecular Simulations, 2000. Website. Journal articles are highly preferred over websites. Websites are dynamic and usually arbitration is not peer-to-peer. One of the only things that a website is an acceptable reference is when it refers to a database (however, an article is usually associated with the creation of a database). If you should use a website, reference Includes title for site, author(s), last year update and URL. Using a website as a reference for scientific data or descriptions of chemical processes is unacceptable. (7) Cheatham, T. E., III Protocol simulation for poly leothides; 1998, ––polyT. Tables, designs and figures of tables, designs and figures are all hidden ways to convey your message. As you prepare these items for your report, remember to think about your reader. You want them to derive the maximum amount of information with the minimum working value. Pretend to be a singer and ask yourself, Does it raise my understanding? Can I find everything? Can I read it without distracting me? poorly prepared tables, designs and figures about your science and that of you as a scientist will reflect badly, so think carefully about preparing your report. Tables of a table are a way to summarize data or ideas in a coherent, network-like fashion. It is simply not the output of the spreadsheet! You need to prepare the table in a word processor to match the formatting to the rest of your report. Generally the tables do not have more than ten rows and columns to prevent the reader's onerous. One common exception in review articles (such as in chemical reviews) is where a writer is trying to summarize the results from the whole field. Another common exception to the report is X-ray crystallography data. These tables have their own formatting rules, and were not discussed here. Tables in text are referred to as #tables. Tables, designs and figures are labeled separately, with Arabic numerals, in the order referred to in the article. Tables have a table title, which appears in some journals above the table, while in others it appears below. In both cases, the table description is always on the same table page. Don't use lines or boxes in your table unless absolutely necessary. Use spaces between your columns instead (useful hint: it's best to use your word processor table formatting tools rather than try to queue columns using tabs or spaces). All column or row headings should have clear captions and units if needed (usually in Prantos). Any number that is provided must have significantly appropriate figures, and an indication of error must be shown (click here to check how to report uncertainty in one person's data). An example table is given below. Table 1. The aminosylation efficiency of doblexia ala substrates contains replacement of base pairs at 2:71 position. 2:71 Base Pairkcat /KM (relative)aFold decreaseb-ΔΔG‡ (kcal/mol)c G:C (wild-type)10 Watson-Crick Pur:Pyr Base Pairs I:C0.511.90.39 G:4 HC 0.253.90.81 2AA:U0.234.30.86 2AP:U0.185.61.0 aValues reported an average of at least three designations with average standard deviations ±26%. The reduction of bFold in kcat/KM is compared to wild doblexyala. cΔΔG‡ RTln[(kcat/KM)variant/(kcat/KM)wild-type], R=1.98272 cal/mol•K and T=298 K. Schemes A schemes A is usually a sequence of two or more chemical reactions that together summarize a synthesis. A plan may also show steps in purification with each step or reacting to reactions, products, catalysts, and efficiency. A design that represents a chemical reaction may also show possible intermediaries. Note that mechanisms are not usually transmitted using a scheme because they are more complex and show where electrons are suggested to move. Mechanisms are often placed in the same shape. This is a common convention in a plan to write a bold number beneath the chemical species referred to in the text. Note that for the first occurrence of bold number in text, the name of the chemical is given, but then only the bold number is used to identify it. This method of defining abbreviations for compounds can also be done in the experimental section, if there is no design. This is very useful when the name of a compound is long or complex. One-step function is usually written to the right of the equation, although it is also appropriate to write the function under the arrow. Also note how to summarize the reaction conditions (as one, the first step below), which saves the reader from flipping into the experimental section for these details. Each layout also has a subtitle that is included under the layout. The description should summarize in summary what is in the plan. If the design is from another source, the reference of this resource should appear at the end of the caption. Below is an example of a design that may appear in an artificial article. The following text shows how to refer to this design in the body of the article. Design 1. Synthesis of benzyl chloride (3). Benzamide (1) was refluxed under aqueous acidic conditions for 1 h to yield benzoic acid (2). Then acid (2) was refluxed with SOCl2 to yield benzoyl chloride (3). Sometimes a design may be used to represent a non-chemical process or how to connect the components of a tool. These could also be presented as digits, and there is no definitive rule that will tell you when to use a scheme and when to use a digit. When in doubt, I think of the reader and use the method that transmits the most information in the form of easily understanding the figures fall into two broad categories; those are visual representations of the concepts presented in the text, and those that sum up the data. Again, it is vital to your report that your faces are clear, compelling and readable and support the arguments you make. Remember that you have to go and discuss it in any form in the text! If a figure is not mentioned, you need it! Figures that are visual representations of concepts usually appear in the introduction, but it is also appropriate to put them in the discussion. Use this type of shape to write yourself more thoroughly (remember the conversion factor: 1 image = 1 kword). Humans are very visually oriented and we can understand the complex concepts presented as image more easily then when they are presented in words or as mathematical formulas. Some examples of conceptual cultivars are: 1) a picture of metal deposition on a silicon wafer. 2) A diagram of the life cycle of HIV. 3) A picture of exciting microwave water molecules. 4) A diagram showing the principle of Frank Condon. 5) A proposed organic mechanism. Graphs are figures that provide data. You use a graph when it has more data than it has instead in a table. The general rules for preparing good figures for your notebook also apply in a laboratory report (click here to check the graph preparation). Formatting tips: They don't use colored backgrounds or gridlines, and they don't draw a box around the graph. You may see it more to combine all your data into a graph. For example, it may be appropriate to place six lines with absorption as a function of time, with different concentrations of a reactor on a graph instead of making six different graphs. However, when doing so, be careful not to over-clutter the graph. Standard curves should not be included in this section unless the initial purpose is the test. They should be placed in support information. Figures have figure captions compiled in the Figure Legend section, located on a separate page at the end of the paper. Magazines chose this format due to typo issues and have been preserved for the reader despite the discomfort. Every shape should appear on your page in order as it is discussed in the text. Shape captions appear in the Figure Legends section and do not appear on the same shape page. However, at the bottom, the right hand corner of the text page appears the following identification: the last name of the first author et al., the shape number of legends all shape legends (descriptions) should be found in the section titled Legends Of Shape. The template for a myth-shaped usually: shape number (italics and bolds), a short title (followed by a period) and then a description of what is in shape. All shaped legends on a separated page are compiled by an empty line. Be sure to define in the title of each symbol used in the shape, and note whether the lines that pass through the data points are appropriate, or the eye guide. Example Figure Caption Figure 1. Nuclear acid buzzers. Chemical structures (a) adenine, (b) guanine, (c) citosine, and (d) tymatine. Information support is this section (also known as supplementary materials) where you can include information that may be useful, but not necessary, to evaluate your data. Items in this section may include calibration curves, and spectrums (from which you extract only one absorption value for your analysis). Figures or tables of data that were summarized in the text, or not critical to conclusions, are also supposed to be placed in supporting information. It This type of material is the position table of the atom produced in an X-ray crystal structure. Resources 1. Click here to get this file in PDF format. (Link not yet enabled) 2. Click here for example from a completed laboratory report. 3. ACS Style Guide; 2nd ed.; Dodd, J. S., Ed.; American Chemical Society: Washington, D.C., 1997. 4. Booth, W.C.; Colombo; Williams, J.M. The Craft of Research The University of Chicago Press: Chicago, IL, 1995. 5. Spector, T.J. Chemistry, 1994, 71, 47-50. Click here to view as a PDF file (Truman addresses only). 6a. Journal of the American Chemical Society Instructions for Authors, 2007. B. Inorganic Chemistry Training for Authors, 2007. c. Chemical Review Guidelines for Authors, 2007. 7. Every non-English word must be italicized. This includes Greek and German words, and their acronyms appear as part of chemical names (e.g., ortho-, meta-, para-, cis-, trans-, e-z-, alpha-, beta, etc.). Italicized are also secondary dense forms (sec-), tertiary (tert-), etc. The primary exception to italicing non-English words is Greek and Latin overre revenues that note numbers in chemical names (e.m., Mono, B, Terry, etc.). Some of the common Latin phrases that appear in scientific writing are vide infra phrases (see later), supra vide (see earlier), et alia, Latin for and others), for example (from Latin exempli gratia, for example, usually not italicized) and means (italicized from Latin ID, it is, it is also usually not italicized). Other Latin phrases and abbreviations commonly used in footnotes and references (such as op. cit.) are not used in scientific writing. Write.